Out-of-Band Methodology – Separate Communication paths

In-band Signaling

Voice ─── Signaling ─── | Telephone Switch |
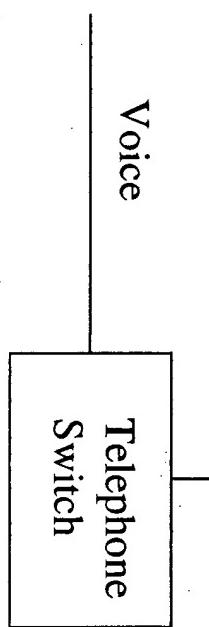
In-band Network Management
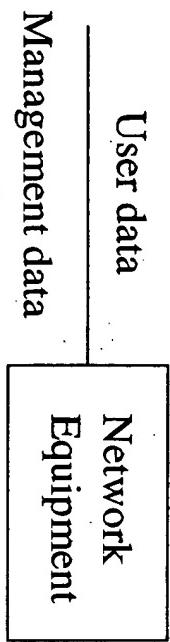
Management data / User data ─── | Network Equipment |

In-band Authentication

Access (login) / Authentication (Password) ─── | Computer |

Out-of-band Signaling

Voice ─── | Telephone Switch | ─── Signaling

Out-of-band Management

User data ─── | Network Equipment | ─── Management data

Out-of-band Authentication

Authentication (Password) ─── | Computer | ─── Access (login)
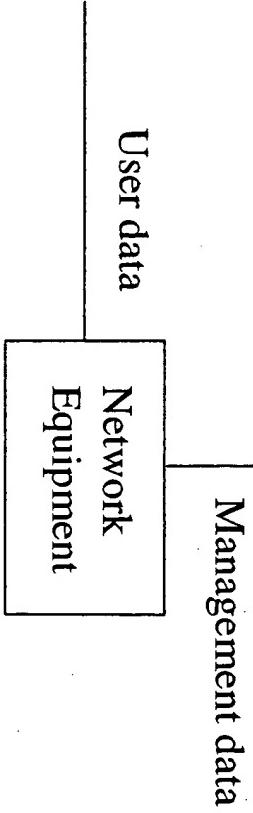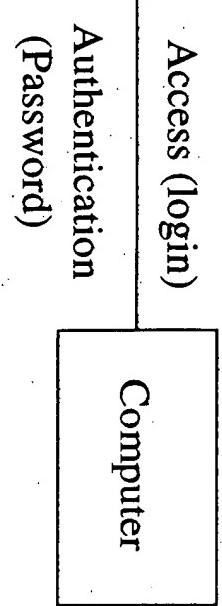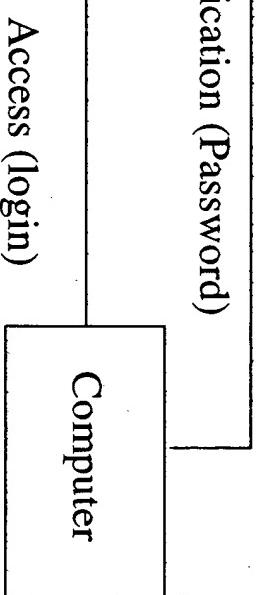
Tuai vs. Us

Tuai: In-band authentication

Voice
Encoder

Modem

Access (login)

Authentication
(Voice Password)

Modem

Controller

Computer

Us: Out-of-band authentication

Telephone

Authentication
(PIN or Voice Password)

Modem

Access (login)

Modem

Controller

Computer
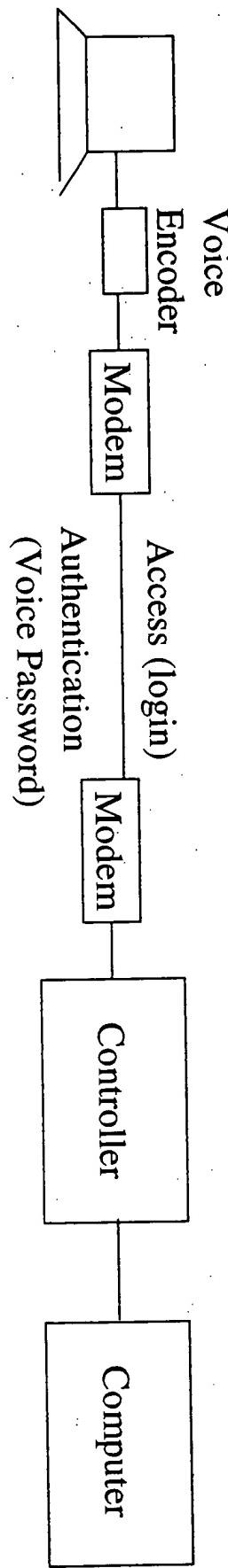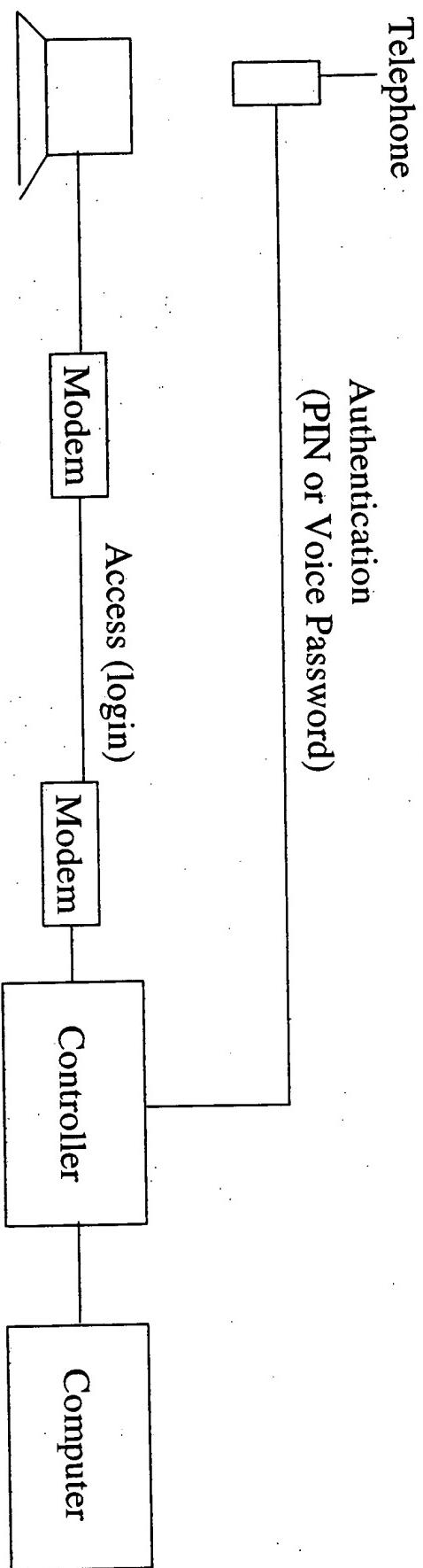
Tuai vs. Us

Differentiation –

- We are out-of-band, Tuai is in-band.

- We can work over the internet or a local area network, Taui can't.

- We use the telephone as an authentication device, Taui does not.

- In the case of Tuai, the call back happens after authentication. In our case, it happens before authentication.